

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 2, 5-11, 14-19, 22-24 and 26 are presently active in this application, Claims 1, 10 and 19 having been amended by the present amendment and Claims 3, 4, 12, 13, 20, 21, 25 and 27-52 having been previously withdrawn from consideration as directed to a non-elected invention.

In the outstanding Office Action Claims 1-2, 5-11, 14-19, 22-24 and 26 were rejected under 35 USC §102(e) as being anticipated by Constrini et al (U.S. Patent Application Publication 2004/0063223).

In light of the outstanding rejection, Claims 1, 10 and 19 have been amended to clarify the difference between the recited "side wall insulting film" and "sidewall spacer 82" of U.S. Patent Application Publication 2004/0063223 (hereinafter referred to as the '223 publication). To that end, the amended Claim 1, 9 and 19 recite that the semiconductor memory device of the present invention includes a cap layer formed on the second ferromagnetic film; and that the side wall insulating film has an upper surface lower than that of the cap layer.

According to the '223 publication, the "sidewall spacer 82" is formed to reach the upper surface of electrode 92, and covers not only the side walls of tunnel barrier layer 115 and free layer 120 but also the entire side wall of cap layer 125. Even if the layers 122 and 117 are considered as parts of the cap layer, the "sidewall spacer 82" covers the entire wall surface of the cap layer.

In contrast, the upper surface of the "side wall insulating film" of Claim 1 is lower than the upper surface of the cap layer. That is, the "side wall insulating film" covers only a

part of the side wall of the cap layer, and that does not cover the other parts. Thus, the "side wall insulating film" recited in amended Claim 1 is not disclosed in '223 publication. In other words, claims 1, 10 and 19 of the present application have novelty and should not be rejected under 35 U.S.C. 102(e). The same arguments as set forth above in connection with the sidewall spacer 82 of '223 publication hold true for the "sidewall 10" disclosed in U.S. Patent Application Publication 2002/0146851 (hereinafter referred to as the '851 publication).

Applicant's claimed invention described above is advantageous for several reasons. First, the contact resistance of cap layer 36 and contact plug 43 (See FIG. 1A) becomes stable. When a contact hole is made inside of dielectric layers 41 and 42 to form contact plug 43, the bottom of contact hole might be shifted from the upper surface of cap layer 36; however, in the claimed structure, the plug 43 can be contacted with a portion of the upper part of the side wall of the cap layer 43 since "side wall insulating film" is not formed on the portion. Therefore, the contact resistance of cap layer 36 and plug 43 can be reduced even if the process variation arises.

Furthermore, the "side wall insulating film" is not exposed to the bottom of contact hole even if the bottom of the contact hole is shifted from the upper surface of cap layer 36. If various materials are exposed to the bottom of a contact hole when this contact hole is made, there may be a case where a polymer is produced depending on etching conditions. In this case, the contact resistance inevitably varies. However, in the structure disclosed in the present application, only cap layer 36 or/and dielectric layer 41 is exposed to the bottom of the hole, and the production of a polymer is prevented.

In view of the foregoing, it is respectfully submitted that pending Claims 1, 2, 5-11, 14-19, 22-24 and 26 clearly are not anticipated by either the '223 publication or '851 publication, and are patentably distinguishing thereover.

Consequently, in view of the present amendment and in light of the above comments, no further issues are believed to be outstanding, and the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Eckhard H. Kuesters
Attorney of Record
Registration No. 28,870

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)